Selftest XML Basics

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INTRODUCTION SELFTEST XML BASICS

To get an idea of the required prerequisites for the courses XSLT and XQuery, we have composed this set of questions. They are based on the contents of the course XML Fundamentals Course.

This test consists of 20 multiple choice questions. For most questions, *there is only one answer possible*. If multiple answers are possible, this will be clearly indicated. The question is answered correctly, if and only if all correct answers are given.

This test will take you about ten minutes.

You will find the answers and guidelines for the evaluation at the end of this document.

QUESTIONS SELFTEST XML BASICS

1. Given the following xml document.

```
<Question subject='Math'>
     <Remark>please, read <b> the question </b> carefully </Remark>
     <Calculation>
         <Number>2</Number>
         <Operator>plus</Operator>
         <Number>3</Number>
</Calculation>
<Result>5 is the right answer</Result>
</Question>
```

   Which element has a mixed content?

   O (a) Remark.

   O (b) Result.

   O (c) Calculation.

   O (d) Question.

2. Which node is considered a text node by the parser?

   O (a) <PCDATA>1 > 2</PCDATA>

   O (b) <![CDATA[1 > 2]]>

   O (c) <CDATA>1 > 2</CDATA>

   O (d) <!CDATA[1 > 2]>

3. Which xml elements are correct? *[2 answers]*

   [_] [a] <Calc>1 > 2</Calc>

   [_] [b] <Calc>2 < 3</Calc>

   [_] [c] <Calc>2 > 3</Calc>

   [_] [d] <Calc><!CDATA[1 > 2]>

4. Given the following xml element.

```
<name>
    <firstname>John</firstname>
    <lastname>Lennon</lastname>
</name>
```

What is a correct DTD description for it?

O (a)

```
<!ELEMENT name (firstname, lastname)+>
<!ELEMENT firstname (#CDATA)>
<!ELEMENT lastname (#CDATA)>
```

O (b)

```
<!ELEMENT name (firstname | lastname)>
<!ELEMENT firstname (#CDATA)>
<!ELEMENT lastname (#CDATA)>
```

O (c)

```
<!ELEMENT name (lastname | firstname)+>
<!ELEMENT firstname (#PCDATA)>
<!ELEMENT lastname (#PCDATA)>
```

O (d)

```
<!ELEMENT name (firstname | lastname)>
<!ELEMENT firstname (#PCDATA)>
<!ELEMENT lastname (#PCDATA)>
```

5. Which is a correct DTD way to specify attributes ‘nr’ and ‘lang’ for element ‘Article’?

O (a) <!ATTLIST Article nr #CDATA REQUIRED lang #CDATA OPTIONAL>

O (b) <!ATTRIBUTES Article nr #PCDATA lang #PCDATA>

O (c) <!ELEMENT Article <!ATTRIBUTES nr #REQUIRED lang #REQUIRED>>

O (d) <!ATTLIST Article lang CDATA #IMPLIED nr CDATA #REQUIRED>

6. Given the following xml document.

```
<name>
    <firstname>John</firstname><lastname>Lennon</lastname>
</name>
```

What is a correct schema structure for it?

O (a)

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" >
  <xs:element name="FirstName" type="xs:string"/>
  <xs:element name="LastName" type="xs:string"/>
  <xs:element name="name">
    <xs:complexType>
      <xs:sequence>
        <xs:element ref="FirstName"/>
        <xs:element ref="LastName"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

O (b)

```
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema" >
  <xsd:element name="name">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element name="firstname" type="xsd:string"/>
        <xsd:element name="lastname" type="xsd:string"/>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
</xsd:schema>
```

O (c)

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" >
  <xs:element name="firstname" type="xs:String"/>
  <xs:element name="lastname" type="xs:String"/>
  <xs:element name="name" type="nametype"/>
  <xs:complexType type="nametype">
    <xs:sequence>
        <xs:element ref="firstname"/>
        <xs:element ref="lastname"/>
    </xs:sequence>
  </xs:complexType>
</xs:schema>
```

O (d)

```
<xs:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema" >
  <xs:element name="name">
    <xs:complexType>
      <xs:sequence>
        <xs:element ref="firstname" />
        <xs:element ref="lastname" />
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

7. Which element may not be used as child of <xs:simpleType> ?

O (a) <xs:extension>

O (b) <xs:restriction>

O (c) <xs:list>

O (d) <xs:annotation>

8. Which attribute for the root element xs:schema is necessary if you want to place the elements in a namespace ?

O (a) elementFormDefault

O (b) targetNamespace

O (c) defaultNamespace

O (d) attributeFormDefault

9. Which XML documents are well-formed? *[2 answers]*

[_] [a]

```
<?xml version="1.0" encoding="UTF-8"?>
<x   xmlns="https://abis.be" xmlns:abis="www.abis.be"
     xmlns:a="https://abis.be">
  <y a:a="1" abis:a="2"></y>
</x>
```

[_] [b]

```
<?xml version="1.0" encoding="UTF-8"?>
<x xmlns="www.abis.be" xmlns:abis="www.abis.be" >
  <y a="1" abis:a="2"></y>
</x>
```

[_] [c]

```
<?xml version="1.0" encoding="UTF-8"?>
<x xmlns="www.abis.be">
  <y a="1" a="2"></y>
</x>
```

[_] [d]

```
<?xml version="1.0" encoding="UTF-8"?>
<x xmlns="www.abis.be" xmlns:abis="www.abis.be" xmlns:a="www.abis.be">
  <y a:a="1" abis:a="2"></y>
</x>
```

10. Which is a valid node-type in XPath?

O (a) entity

O (b) cdata

O (c) processing-instruction

O (d) document-fragment

11. Which axis is a reverse axis?

O (a) descendant

O (b) ancestor

O (c) following

O (d) attribute

12. Given the following xml and xsl. What is the result?

```
<Company>
   <Name>Abis</Name>
   <City>Leuven</City>
   <Telephone>016/245610</Telephone>
</Company>

<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
  <xsl:template match="/">
    <xsl:apply-templates select="Company/Telephone"/>
  </xsl:template>
  <xsl:template match="Telephone">
    <xsl:apply-templates select="preceding-sibling::*"/>
  </xsl:template>
</xsl:stylesheet>
```

O (a) AbisLeuven

O (b) LeuvenAbis

O (c) LeuvenAbis016/245610

O (d) none of the above

13. With which nodetype test can a CDATA section be selected? *[2 answers]*

[_] [a] child::text()

[_] [b] child::cdata()

[_] [c] child::processing-instruction()

[_] [d] child::node()

14. How can an empty element “PartNumber” be created in XSL?

O (a)

```
<xsl:element name="PartNumber">
</xsl:element>
```

O (b)

```
<xsl:element name="PartNumber" type="empty"/>
```

O (c)

```
<xsl:text disable-output-escaping="yes">&lt;PartNumber/&gt;</xsl:text>
```

O (d)

```
<PartNumber>  </PartNumber>
```

15. Which xsl element cannot have a ‘select’ attribute?

O (a) xsl:copy

O (b) xsl:apply-template

O (c) xsl:value-of

O (d) xsl:for-each

16. Which output method prints only text nodes ?

O (a) string

O (b) text

O (c) html

O (d) xml

17. Which Xpath expression selects a Person Element having the same parent as the context node, and being the closest to the context node?

O (a) /descendant-or-self::Person

O (b) preceding-sibling::Person

O (c) preceding-sibling::Person[1]

O (d) parent::*/Person[1]

18. If I want to print a space between the firstname and the lastname, what should my xsl look like?

O (a)

```
<xsl:value-of select="firstname"/>
<xsl:text> </xsl:text>
<xsl:value-of select="lastname"/>
```

O (b)

```
<xsl:value-of select="firstname"/> <xsl:value-of select="lastname"/>
```

O (c)

```
<xsl:value-of select="firstname"/>
 
<xsl:value-of select="lastname"/>
```

O (d)

```
<xsl:preserve-space>
   <xsl:value-of select="firstname"/>
   <xsl:value-of select="lastname"/>
</xsl:preserve-space>
```

19. What is a correct way to call this template?

```
<xsl:template name="test">
    <xsl:param name="abc"/>
<xsl:template>
```

O (a)

```
<xsl:call-template name="test">
   <xsl:param name="abc" select="firstname"/>
</xsl:call-template>
```

O (b)

```
<xsl:apply-template select="test"/>
```

O (c)

```
<xsl:call-template name="test"/>
```

20. Which node types can be selected in XPath with * ? *[2 answers]*

[_] [a] Comment nodes

[_] [b] Attributes

[_] [c] Element nodes

[_] [d] Text nodes

EVALUATION.

Here are the correct answers to all questions:

1. a
2. b
3. a c
4. c
5. d
6. b
7. a
8. b
9. a b
10. c
11. b
12. a
13. a d
14. c
15. a
16. b
17. c
18. a
19. c
20. b c

Give yourself 1 point for each correctly answered question; for multiple answer questions, all answers should be correct.

When your score is less than 50%, you will certainly learn a lot in the course XML basics. But be sure that your background on XML concepts is sufficient: fill out the corresponding selftest (see PDF file) to verify this.

When your score is between 50% and 75%, following the course XML basics will probably improve your XML knowledge.

With a score of more than 75%, you won't learn much new things in this course. In this case you could consider following one of the follow-up courses.